

Preliminary Amendment

Applicant: Melissa D. Boyd et al.

Serial No.: Unknown (Parent Serial No. 10/194,843)

Filing Date: Herewith (Parent Filing Date: July 11, 2002)

Docket No.: 10970792-4

Title: MULTILAYERED CERAMIC SUBSTRATE SERVING AS INK MANIFOLD AND ELECTRICAL INTERCONNECTION PLATFORM FOR MULTIPLE PRINTHEAD DIES (as originally filed)

IN THE CLAIMS

Please cancel claims 1-19 without prejudice.

Please add new claims 20-45 as follows:

20. (New) A fluid ejection assembly, comprising:
- a platform having a fluid inlet, a fluid outlet, a plurality of fluid feed slots, and a fluid manifold defined therein; and
 - a plurality of fluid ejection devices each mounted on the platform, each of the fluid ejection devices including an array of drop ejecting elements and a fluid refill slot communicating with the array of drop ejecting elements,
 - wherein the fluid refill slot of each of the fluid ejection devices communicates with at least one of the fluid feed slots of the platform, and
 - wherein the fluid manifold fluidically couples each of the fluid feed slots with the fluid inlet and the fluid outlet of the platform.
21. (New) The assembly of claim 20, wherein the fluid manifold is adapted to circulate fluid between the fluid inlet, the fluid feed slots, and the fluid outlet.
22. (New) The assembly of claim 20, wherein the fluid manifold is adapted to circulate fluid from the fluid inlet to one of the fluid feed slots, from the one of the fluid feed slots to another of the fluid feed slots, and from the other of the fluid feed slots to the fluid outlet.
23. (New) The assembly of claim 20, wherein the fluid manifold includes a channel communicating with at least one of the fluid inlet and the fluid outlet, and a plurality of sub-channels each communicating with the channel and one of the fluid feed slots of the platform.
24. (New) The assembly of claim 23, wherein the fluid manifold further includes another channel communicating with an other of the fluid inlet and the fluid outlet, and another plurality of sub-channels each communicating with the other channel and one of the fluid feed slots of the platform.

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25. (New) The assembly of claim 23, wherein the fluid manifold further includes another plurality of sub-channels each communicating with one of the fluid feed slots of the platform and another of the fluid feed slots of the platform.

26. (New) The assembly of claim 20, wherein the platform is a multilayered platform and includes a first layer having the fluid inlet and the fluid outlet defined therein, a second layer having the plurality of fluid feed slots defined therein, and at least one third layer having the fluid manifold defined therein, wherein the at least one third layer is interposed between the first layer and the second layer, and wherein the fluid ejection devices are each mounted on the second layer.

27. (New) The assembly of claim 20, wherein each of the drop ejecting elements include a fluid chamber communicated with the fluid refill slot, a firing resistor positioned within the fluid chamber, and a nozzle opening associated with the firing resistor and communicated with the fluid chamber.

28. (New) The assembly of claim 20, further comprising:
an electrical interconnection extending through the platform, wherein each of the fluid ejection devices are electrically coupled to the electrical interconnection.

29. (New) A fluid ejection system, comprising:
a reservoir adapted to hold a supply of fluid therein;
a platform having a fluid inlet, a fluid outlet, a plurality of fluid feed slots, and a fluid manifold defined therein, wherein the fluid inlet and the fluid outlet communicate with the reservoir and the fluid manifold communicates the fluid feed slots with the fluid inlet and the fluid outlet; and

a plurality of fluid ejection devices each mounted on the platform, each of the fluid ejection devices including an array of drop ejecting elements and a fluid refill slot communicating with the array of drop ejecting elements, wherein the fluid refill slot of each of the fluid ejection devices communicates with at least one of the fluid feed slots of the platform.

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30. (New) The system of claim 29, wherein the fluid manifold is adapted to circulate a quantity of the fluid from the reservoir to each of the fluid ejection devices and from each of the fluid ejection devices back to the reservoir.

31. (New) The system of claim 29, wherein the fluid manifold is adapted to circulate a quantity of the fluid from the reservoir to one of the fluid ejection devices, from the one of the fluid ejection devices to another of the fluid ejection devices, and from the other of the fluid ejection devices to the reservoir.

32. (New) The system of claim 29, wherein the fluid manifold includes a channel communicating with at least one of the fluid inlet and the fluid outlet, and a plurality of sub-channels each communicating with the channel and one of the fluid feed slots of the platform.

33. (New) The system of claim 32, wherein the fluid manifold further includes another channel communicating with an other of the fluid inlet and the fluid outlet, and another plurality of sub-channels each communicating with the other channel and one of the fluid feed slots of the platform.

34. (New) The system of claim 32, wherein the fluid manifold further includes another plurality of sub-channels each communicating with one of the fluid feed slots of the platform and another of the fluid feed slots of the platform.

35. (New) The system of claim 29, wherein the platform is a multilayered platform and includes a first layer having the fluid inlet and the fluid outlet defined therein, a second layer having the plurality of fluid feed slots defined therein, and at least one third layer having the fluid manifold defined therein, wherein the at least one third layer is interposed between the first layer and the second layer, and wherein the fluid ejection devices are each mounted on the second layer.

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36. (New) The system of claim 29, wherein each of the drop ejecting elements include a fluid chamber communicated with the fluid refill slot, a firing resistor positioned within the fluid chamber, and a nozzle opening associated with the firing resistor and communicated with the fluid chamber.
37. (New) The system of claim 29, further comprising:
an electrical interconnection extending through the platform, wherein each of the fluid ejection devices are electrically coupled to the electrical interconnection.
38. (New) A method of forming a fluid ejection assembly, the method comprising:
forming a platform with a fluid inlet, a fluid outlet, a plurality of fluid feed slots, and a fluid manifold therein, including fluidically coupling each of the fluid feed slots with the fluid inlet and the fluid outlet via the fluid manifold; and
mounting a plurality of fluid ejection devices on the platform, including fluidically coupling each of the fluid ejection devices with at least one of the fluid feed slots.
39. (New) The method of claim 38, wherein fluidically coupling each of the fluid feed slots with the fluid inlet and the fluid outlet includes fluidically coupling the fluid inlet with one of the fluid feed slots, fluidically coupling the one of the fluid feed slots with another of the fluid feed slots, and fluidically coupling the other of the fluid feed slots with the fluid outlet.
40. (New) The method of claim 38, wherein fluidically coupling each of the fluid feed slots with the fluid inlet and the fluid outlet includes defining a fluid flow path between the fluid inlet, the plurality of fluid feed slots, and the fluid outlet with the fluid manifold.
41. (New) The method of claim 38, wherein forming the platform includes interposing at least one inner layer having the fluid manifold formed therein between a first outer layer having the fluid inlet and the fluid outlet formed therein and a second outer layer having the plurality of fluid feed slots formed therein, and wherein mounting the plurality of fluid ejection devices includes mounting the fluid ejection devices on the second outer layer.

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42. (New) The method of claim 38, wherein fluidically coupling each of the fluid ejection devices with at least one of the fluid feed slots includes fluidically coupling a fluid refill slot of each of the fluid ejection devices with at least one of the fluid feed slots.

43. (New) A method of circulating fluid between a reservoir and a plurality of fluid ejection devices each mounted on a platform, the method comprising:

- communicating a fluid inlet and a fluid outlet of the platform with the reservoir;
- supplying a fluid manifold of the platform with fluid from the reservoir via the fluid inlet;
- distributing the fluid to a plurality of fluid feed slots of the platform via the fluid manifold;
- supplying a fluid refill slot of each of the fluid ejection devices with a portion of the fluid via the fluid feed slots; and
- returning a portion of the fluid to the reservoir via the fluid manifold and the fluid outlet.

44. (New) The method of claim 43, wherein distributing the fluid to the fluid feed slots includes distributing the fluid from one of the fluid feed slots to another of the fluid feed slots via the fluid manifold.

45. (New) The method of claim 43, wherein supplying the fluid refill slot of each of the fluid ejection devices includes feeding a fluid chamber of each of the fluid ejection devices with a portion of the fluid.